

Optical fibre plug connector**PATENT CLAIMS**

- 5 1. An optical fiber plug-in connection (1), comprising at least one pair of
plug-in connectors (3) and a coupling (2), each plug-in connector (3)
having a ferrule (4) and two ferrules (4) of a pair of plug-in connectors
(3) respectively being detachably guided and aligned with respect to
each other within a guiding sleeve (5), and the coupling (2)
10 respectively having a receptacle (20, 21) for each plug-in connector
(3) of a pair of plug-in connectors (3), characterized in that the
coupling (2) comprises a single component.
- 15 2. The optical fiber plug-in connection as claimed in claim 1,
characterized in that a number of pairs of plug-in connectors (3) are
arranged next to one another in the coupling (2).
- 20 3. The optical fiber plug-in connection as claimed in claim 1,
characterized in that the coupling (2) is produced from plastic.
- 25 4. The optical fiber plug-in connection as claimed in claim 1,
characterized in that the plug-in connector (3) comprises a ferrule (4)
and a ferrule flange (7), which has a square (8) and a ferrule
extension (9), which guides the compression spring (17).
- 30 5. The optical fiber plug-in connection as claimed in claim 1,
characterized in that the coupling (2) has a sleeve receptacle (19)
with bores (6), corresponding to the number of pairs of plug-in
connectors (3) to be received, the bores (6) serving for the protected
reception of the guiding sleeves (5), which are accommodated with
lateral play in relation to the walls of the bores.
- 35 6. The optical fiber plug-in connection as claimed in claim 1,
characterized in that a guiding groove (13) in the form of an opening
is provided for each plug-in connector (3) in both receptacles (20, 21)
for the plug-in connectors (3).
7. The optical fiber plug-in connection as claimed in claim 5,
characterized in that each plug-in connector (3) has an arresting part

(10) with a T-shaped attachment (12), which engages in the guiding groove (13) of the coupling (2), and in that the plug-in connectors (3) of a pair are consequently respectively guided in a longitudinally displaceable manner in relation to each other and can be fixed in the two receptacles (20, 21) of the coupling (2), and in that the ferrules (4) abut resiliently against each other with their ferrule end faces (11) within the guiding sleeve (5) on account of the compression springs (17) and establish the connection between two plug-in connectors (3).

8. The optical fiber plug-in connection as claimed in claim 1, characterized in that the plug-in connectors (3) are provided with compression springs (17), which are pushed over the ferrule flange (7) and mounted between the square (8) and the arresting part (10), and consequently ensure in the inserted state the required compression force between the ferrules (4) of a pair of plug-in connectors (3).

9. The optical fiber plug-in connection as claimed in claim 1, characterized in that a number of plug-in connectors (3) are connected to one another by means of the arresting parts (10) to form a single multiple plug-in connector, in order in this way to permit more efficient plugging and releasing of the connections.

10. The optical fiber plug-in connection as claimed in claim 1, characterized in that a number of couplings (2) are connected to one another, lying one on top of the other, by means of screws inserted into the through-bores (25), in order in this way to connect a greater number of optical fibers.

11. The optical fiber plug-in connection as claimed in claims 1 and 9, characterized in that the plug-in connector (3) comprises only those components which are required for use with fibers with a primary coating (typical diameter 245 μm) or with a secondary coating (typical diameter 900 μm).

12. The optical fiber plug-in connection as claimed in claim 1, characterized in that the plug-in connector (3) is provided with a flanged ferrule of an SFF plug-in connector type with a cylindrical ferrule of a diameter of 1.25 mm (for example LC, MU or LX.5).

13. The optical fiber plug-in connection as claimed in claim 1,
characterized in that the ferrule end faces (11) of the ferrules (4) are
preferably provided with a PC or UPC polish, or else with an APC
polish.
14. The optical fiber plug-in connection as claimed in claim 1,
characterized in that the optical fibers (18) to be connected are either
single-mode or multi-mode optical fibers or optical fibers of the HCS
(Hard Clad Silica) type.